



## **Scientists and Experts on Force-Feeding for Foie Gras Production and Duck and Goose Welfare**

### **Abstract**

The force-feeding of ducks and geese for the production of *pâté de foie gras* causes the birds' livers to become diseased and swollen, inducing hepatic lipidosis; pain and injury from feeding tube insertion; fear and stress during capture and handling; gait abnormality due to distended livers; pathologies in liver function; and increased mortality. An extensive body of scientific evidence confirms that the practice of force-feeding for foie gras is detrimental to animal welfare. Compiled below are statements by leading welfare scientists and experts, including veterinarians who have personally examined force-fed birds or reviewed necropsies.

### **Yvan Beck, Veterinarian, Brussels, Belgium**

- “Generally speaking, foie gras production is directly or indirectly the source of several problems affecting animal welfare and health. These problems could be grouped as follows: 1. Problems directly linked to force-feeding: 1.1. The intentional hepatic steatosis causes pathology of the liver, and 1.2. The technique of force-feeding is the source of pathological complications; and, 2. Problems indirectly linked to force-feeding: 2.1. Extra-hepatic conditions linked to force-feeding, 2.2. Problems linked to the industrialization of production.”<sup>1</sup>
- “The ability for lesions to be reversed in situations of hepatic steatosis is a question of threshold. Nutritional hepatic steatosis is a process which, at a certain level, cannot be reversed and will condemn animals to death. The lesions’ ability to reverse below this threshold can not in any way be used as an argument to deny the underlying pathological condition.  
Thus, the hepatic lipidosis/steatosis induced as a finality of the force-feeding process is a pathological condition.”<sup>2</sup>
- “Another source for my conclusions is the mortality rates of birds used in foie gras production. If animals die during force-feeding, there is a reason for it, even if we ignore the statistical distribution of the correct pathological causes of each death. In fact, they die in large numbers and/or in proportions different from the proportions encountered when other breeding practices are applied to geese and ducks for human consumption. Force-feeding is recognized as the source of these mortality rates, which are 10 to 20 times higher than normal when force-feeding occurs. The induced disease of the liver explains why animals die at the end of the human-induced process, and the hepatic steatosis present in a fatty liver is a pathology that is also a source of direct or indirect complications (diseases) contributing to these mortality rates in breeding operations.”<sup>3</sup>
- “With force feeding, there are various diseases directly affecting the liver. Steatosis/lipidosis belongs to a progressive degeneration process, followed by a necrosis and a hepatic fibrosis. As shown in previous scientific elements, the repercussions of steatosis on the physiological functions of the liver increase as the steatosis develops by affecting with more or less intensity animal health and welfare. Passed [*sic*] a certain threshold, the structural problems—degeneration, sclerosis, vascular problems and necrosis—directly affect the anatomy of the liver and its quality as a finalized product for human consumption.”<sup>3</sup>

- “In addition, this degenerative process indirectly causes several other complications external to the liver for the animals, including secondary infections (exit germs). Deterioration of the musculoskeletal system resulting in fractures of bones is common, in part because immobilization of animals in cages, nutritional imbalance of portions (deficiency in proteins and in minerals), hormonal disturbance and excessive weight which all affect bone growth. Ultimately they cause fractures, as seen in breeding facilities and in slaughterhouses. There are also various respiratory problems which appear during force-feeding and are caused by the physiological reactions caused by the forced ingestion of a big quantity of neuron-vegetative reflex food. Furthermore, without a diaphragm to separate the thorax from the abdomen, the hypertrophied and voluminous liver compresses more and more the air sacs and affects respiration. At the end of force-feeding, the animals are most often panting and incapable of any effort.”<sup>4</sup>
- “Self-imposed force-feeding does not exist under breeding conditions where it always reflects a pathologic situation (physical or social stress). Food itself and its presentation do not correspond to prehension criteria under natural conditions: birds would refuse to eat it or would certainly not eat it in such quantities... The storage of supplies resulting from natural predispositions is thus hardly comparable to the results of force-feeding domestic species.”<sup>5</sup>
- “In conclusion, at a certain stage, the functional hepatic deficiency is considered as the unavoidable outcome of the hepatic steatosis (chap. 4.1.3.): fatty overload, steatosis, steatonecrosis are all steps of the same deleterious process. At the end of force-feeding, the liver is indeed a diseased organ. The bird is killed before collapsing on its own. To present the reversibility of the process as an argument proving the occurrence of a normal physiological process is, once again, tendentious. Indeed, the inherent characteristics of the hepatic parenchyma contribute to this reversibility regardless of the source of the disease and as long as we intervene early enough.”<sup>6</sup>
- “From the point of view of the veterinarian and...of his patient, the debate focuses on three questions of substance:
  - First question: is it possible to consider that the nutritional hepatic steatosis is a phenomenon similar to the natural accumulation of fats supplies by palmipeds before migration?  
The answer is no.  
By controlling breeding techniques, man tends to produce foie gras, a quality product made under the ‘best conditions’. He uses natural predispositions present in some species. There is however no comparison between what nature planned (an hepatic synthesis followed by a peripheral accumulation of fats which respects the functioning of the hepatocyte) and the extreme result which is imposed by force-feeding on the organism. Birds at the end of this process are not able to make any exertions which is in total contradiction with the aim of this activity in natural conditions.
  - Second question: is the nutritional hepatic steatosis a pathology of the liver?  
The answer is yes: the fatty liver (foie gras) is a diseased liver.  
Force-feeding causes structural modifications qualified as “nutritional steatosis” in all the veterinary literature. Hepatic steatosis is, regardless of its origin, a morbid process which perturbs the good functioning of the hepatic cell. The clinical table and the prognostic of this affection are directly linked to its degree of evolution at the time of the beginning of treatment.
  - Would it then be necessary to distinguish between two types of steatosis: the steatosis of the medicine which we try to heal and the steatosis of force-feeding which we encourage?  
If fluctuations of intrahepatocytic and hepatic biochemical parameters are observed during force-feeding, the progressive introduction into the blood of several objective ‘markers’ indicating suffering or cellular necrosis is indubitable. The sequential anatomo-pathological connections established during force-feeding on sacrificed animals also demonstrate the introduction of a pathological process which causes an overload, a distension and finally a degeneration of the hepatic parenchyma.
  - The argument presenting the foie gras as a ‘sane organ’ because of the reversibility of the process is partial and must be rejected as such. The reversibility of an hepatic lesion process is based on its degree of extension. Beyond a certain threshold, the animal is condemned. Below a certain threshold, reversibility depends on two essential characteristics of the organ: the functional supplies and the ability to regenerate

which both interfere with the delays in the appearance of an hepatic symptomatology. In the case of geese force-feeding, modifications of the hepatic parameters appear in the majority of cases on the 18<sup>th</sup> day and mark at this moment the presence of tissue necrosis. It is only at this stage the clinical symptoms appear (icterus, weight loss, digestive troubles...) revealing a very advanced pathology.

Third question: does nutritional hepatic steatosis cause suffering?

The answer is yes.

Ethological expertise is compelling at this level: breeding conditions (particularly for intensive breeding) are completely incompatible with meeting the physiological and ethological needs of normal palmipeds. Veterinary expert opinion also highlights the structural and functional suffering which is caused by the manipulations associated with force-feeding and by the steatosis, the goal of this process.”<sup>7</sup>

- “Force-feeding of palmipeds or nutritional hepatic steatosis provokes a pathological transformation of the liver which causes undeniable animal suffering. The economical goal of the process is to push the transformation of this organ to the maximum in the shortest amount of time in order to maximize profit. However, this must be stopped before the degenerative phenomena, unavoidable beyond a certain level, start affecting the quality (friability) of the product or damaging excessively the health of birds. The topic of this discussion is indeed a choice made by society: some communities consume dog meat, others eat whales or monkey brains... Are we ready to support a practice which scientifically transforms an organ on a living being by making it sick, to satisfy the gustatory pleasure of a few gourmets? And if yes, under what conditions?

I personally think that measures should be taken internationally and by the European Community to forbid this type of production in intensive breeding, regardless of the economic justifications and of the laws of the market in place today. These justifications and laws are not and will never be able to justify a practice which, with a little bit of reflection, can only be considered by civilized beings as a barbaric practice unworthy of the role of man as a guarantor of humanist ethics.”<sup>8</sup>

- “It has been noted that, as well as the pathologies normally attributed to palmipeds (not pursued in this account), force-feeding is the cause of a number of maladies.”<sup>9</sup>
- “Force-feeding to fatten palmipeds is an ethically unacceptable practice, and is in total contradiction to the recommendations concerning Barbary and Mallard ducks, issued by the Permanent Council of the European convention on the protection of farmed animals.”<sup>10</sup>
- “The end result of force-feeding is—hepatic steatosis—which is a liver disease. This causes—at different degrees during its development—physiological and physical problems which are detrimental to the state of health and well-being of birds. Eventually the hepatic steatosis will lead to the death of the birds.”<sup>11</sup>
- “Force-feeding is finally, a practice against nature, which violates the natural prehension of food. Therefore the contention [is] that the introduction of such equipment reduces the well-being of the birds subjected to it.”<sup>11</sup>

**W. Molee**, National School of Agronomics at Toulouse, Castanet-Tolosan Cedex, France

**Marie-Hélène Bouillier-Oudot**, National School of Agronomics at Toulouse, Castanet-Tolosan Cedex, France

**Alain Auvergne**, National School of Agronomics at Toulouse, Castanet-Tolosan Cedex, France

**R. Babilé**, National School of Agronomics at Toulouse, Castanet-Tolosan Cedex, France

- “This study provides evidence that overfeeding with a carbohydrate-rich corn-based diet induces a de novo hepatic lipogenesis in Mule duck which predominates over dietary lipid intake to change the lipid composition of the hepatocyte plasma membrane.”<sup>12</sup>

**Ian J.H. Duncan, Emeritus Chair in Animal Welfare, University of Guelph, Ontario, Canada**

- “In my opinion, the force feeding of ducks and geese, for the production of foie gras is a cruel and inhumane practice that should be banned. There are two aspects to the cruelty:
  1. Forcing food down a bird’s gullet beyond the limits of its appetite will cause pain and suffering. Also, the regular insertion of a feeding tube down the esophagus several times a day will inevitably lead to damage of the esophagus. When the esophagus becomes damaged, then the painfulness of every force feeding episode will be exacerbated.
  2. Force feeding quickly results in birds that are obese and in a pathological state, called hepatic lipidosis of [*sic*] fatty liver disease. There is no doubt, that in this pathological state, the birds will feel very ill. In my view it is completely unethical to deliberately promote a diseased state in an animal. The birds’ obesity will lead to a myriad of other problems from skeletal disorders to difficulties in coping with heat stress and all of which are accompanied by feelings of malaise.  
In my view, no civilized country would allow this barbaric practice to continue.”<sup>13</sup>

**Lynn R. Dustin, Veterinarian, Bay Area Bird Hospital, San Francisco, California, USA**

- “Numerous injuries can occur from the process of force feeding. Because a gavage tube is inserted down the esophagus, scalding can occur from food that is too hot, and the tube can cause inflammation of the throat, bruising or perforation of the esophagus, asphyxia, over expansion of the esophagus and lesions of the neck, throat or chest.  
Some duck species gorge prior to migration. However, they do not gorge to the extent of causing illness or making themselves incapable of breathing or walking, which results from force feeding. Nor do they suffer the repeated trauma of gavage tube insertion.”<sup>14</sup>
- “There is nothing natural about the production of foie gras.”<sup>14</sup>
- “The practice of force feeding a duck to produce a fatty liver is inherently cruel and should be banned by law.”<sup>14</sup>

**Scientific Committee on Animal Health and Animal Welfare of the European Commission**

- “Ducks are fed considerably more during the force feeding period than they would eat voluntarily, and they receive this food without having the possibility to forage in a species-specific manner.”<sup>15</sup>
- “The avoidance behaviour by most ducks and geese in pens during force feeding observed by members of the working group indicates aversion to the force feeding procedure.”<sup>16</sup>
- “Daily hand-feeding of ducks and geese is normally associated with a positive response by the animals towards the person feeding them. In the preparation of this report, members of the Committee visited a number of farms practising force feeding but this behaviour was not observed by the visitors on these occasions. When ducks or geese were in a pen during the force feeding procedure, they kept away from the person who would force feed them even though that person normally supplied them with food. At the end of the force feeding procedure, the birds were less well able to move and were usually panting but they still moved away from or tried to move away from the person who had force fed them.”<sup>17</sup>
- “However, some experts of the working group observed on visits to fattening units that the legs of the force fed animals were pushed outwards, away from the mid-line of the body so that they met the ground considerably further apart than is normal and so that the leg could not be held vertically when the bird was standing or walking and they conclude that it was caused by the great expansion of the liver. They observed

that the consequence of this was that birds with expanded livers had difficulty in standing and their natural gait and ability to walk were severely impaired.”<sup>16</sup>

- “Birds, including ducks and geese, have a wide range of pain receptors and an elaborate pain recognition system. Most injuries caused by tissue damage during handling or tube insertion would result in pain. The oropharyngeal area is particularly sensitive and is physiologically adapted to perform a gag reflex in order to prevent fluids entering the trachea. Force feeding will have to overcome this reflex and hence the birds may initially find this distressing and injury may result.  
The beak of a duck is richly innervated and the insertion of a ring through the beak would cause pain during the operation and might cause neuroma formation, and hence prolonged pain, thereafter. Similarly, most injuries to the feet caused by inadequate flooring would be painful.”<sup>18</sup>
- “Hence it appears that the level of steatosis normally found at the end of force feeding would not be sustainable for many of the birds. For this reason, and because normal liver function is seriously impaired in birds with the hypertrophied liver which occurs at the end of force feeding this level of steatosis should be considered pathological.”<sup>19</sup>
- “A further source of information concerning whether the liver is in a pathological condition at the end of gavage is to ask qualified pathologists for their opinion on the histology of such liver. In non-statistical surveys (Beck; 1994, 1996 unpublished) the opinions of 25 pathologists from various countries were sought on this point. Most of these considered that the liver condition was pathological. Several of them pointed out that some degree of steatosis can occur in healthy animals at certain times of life but they considered that the degree of steatosis at the end of force feeding was much more severe than any naturally occurring steatosis.”<sup>20</sup>
- “In conclusion, there is good evidence that liver structure and function that would be classified as normal is severely altered and compromised in force fed ducks and geese, but that lipid metabolism biochemical pathways are still functioning normally, albeit at an increased rate. Other clinical signs that force fed birds exhibit which are not seen in age matched birds fed ad libitum on a ‘natural’ diet include: loose faeces, wet neck, increased time spent sitting and less time carrying out active behaviours, some aversion to the feeding process, increased incidence of bone fractures and liver lesions at the abattoir. Continued feeding would almost certainly result in an earlier death.”<sup>21</sup>
- “The changes in hepatocytes and other cells in the liver of force fed ducks and geese are substantial. The most obvious change is the increase in the number of large fat globules visible in the cells. A limited increase in the presence of fat globules in liver can occur in normal liver in certain conditions but no normal animal has steatosis of the liver to the extent which occurs in all force fed birds. During the force feeding period, liver function is impaired.”<sup>22</sup>
- “Force feeding results in an increase in liver size to the extent that the abdomen expands. Logically this should result in the legs being held further away from the midline of the body, making locomotion more difficult. Panting occurs more often than in ducks or geese which are not force fed. Some members of the working group have observed this displacement of the legs and panting.”<sup>22</sup>
- “Hypertrophied livers can cause discomfort in a variety of other species. Hence it may be that some discomfort results directly from the hypertrophied liver in force fed ducks and geese.”<sup>22</sup>
- “The force feeding procedure deprives the bird of an important behaviour which is normal feeding.”<sup>23</sup>
- “The problems of the force feeding procedure itself are: (1) handling by humans which, in the commercial force feeding situation, can cause aversion and discomfort for ducks and geese, (2) the potentially damaging

and distressing effects of the tube which is inserted into the oesophagus, (3) the rapid intubation of a large volume of food.”<sup>23</sup>

- “The Scientific Committee on Animal Health and Animal Welfare concludes that force feeding, as currently practised, is detrimental to the welfare of the birds.”<sup>24</sup>
- “The working group was informed that ducks at the end of the force feeding period can have serious injuries to the oesophagus or, more usually, having [*sic*] clear evidence of tissue damage in the oesophagus. It seems likely that birds have sufficient damage to oesophagus tissue, caused by the force feeding process to have been painful to the birds.”<sup>25</sup>

**Jean-François Gabarrou**, National Institute for Agronomical Research, Nouzilly, France

**Marie-Rose Salichon**, National Institute for Agronomical Research, Nouzilly, France

**Gérard Guy**, Head of Experimental Unit, National Institute for Agronomical Research, Artiguères, France

**Jean-Claude Blum**, National Institute for Agronomical Research, Nouzilly, France

- “The liver of the overfed ducks weighed ten times more than that of controls (695 vs 69 g [24.5 vs 2.4 oz]). The phospholipid, ash, water, and protein content of the liver were only slightly higher (2.6-, 3.6-, 4.4- and 3.2-fold, respectively) but the liver lipid concentration was 16.5 times higher after than before overfeeding (56.1 vs 3.4 g/100 g [1.98 vs 0.12 oz/3.53 oz] liver, respectively). Liver phosphatidylcholine concentration was higher in the control group (32.4 vs 22.9 mol/100 mol phospholipid) revealing a choline deficiency that could contribute to the development of liver steatosis. In liver phospholipid, the level of linoleic and arachidonic acids were markedly decreased in the overfed ducks, from 5 and 18.1 to 3.7 and 7.1 mol/100 mol fatty acids, respectively, and were mainly replaced by oleic acid. Plasma triacylglycerols increased 5.9-fold, cholesterol 2.2-fold and phospholipids 1.6-fold. Heat-induced (50 min at 105 °C [221 °F]) fat release, an index of poor liver integrity, was particularly high for the large, fat livers which contained low levels of phospholipids and phosphatidylcholine.”<sup>26</sup>

**Marianne Heimann**, Institut de Pathologie et de Génétique, Lovreval, Belgium

**Annick Delire**

- “The excessive lipid load observed in the livers of ducks and geese at the end of force-feeding is, from the anatomopathological point of view, a lesion, and not part of the normal physiological process. The lesional character of these alterations is also confirmed by the changes in clinical biology (increase of hepatic enzymes in the blood etc). In no instance, can this increase be considered normal. It is a categoric sign of a diseased state and a clinical symptom (difficulty in breathing, difficulties in regulating temperature, exhaustion, difficulties in making an effort etc).[.] Therefore one is not making use of a natural physiological process in palmipeds to produce a delicacy but rather a pathological process which can be reproduced in certain species. If the liver of a goose or a duck is used, it is because the pathology is easier to reproduce.

In addition to the lesions caused directly by force-feeding, the immune system as well as the liver is rendered frail to cope with any stress to which the animal is subjected.

The animal therefore often develops infections, which can be combated by the use of antibiotics. This however, poses the very serious problem of having residues of antibiotics within food destined for human consumption.”<sup>27</sup>

- “[T]he means of obtaining this delicacy, and the money which it fetches, above all for a minority, does not justify the extremely painful conditions in which this food is produced.”<sup>27</sup>
- “In the force-feeding of geese, the liver reaches a very large size, distends the peritoneum and occupies a place normally reserved for other organs, notably air sacs. This leads to respiratory difficulties, which have

still not yet been detected because the animals, shut into narrow cages, cannot make any muscular effort, and above all have enormous difficulties in controlling their temperature. There is also vessel compression which develops into circulatory problems.

Apart from these facts, we are in the presence of animals which have been made extremely fragile, very sensitive to stress, changes in the environment, and to infections.”<sup>28</sup>

**Dominique Hermier**, National Institute for Agronomical Research, Orsay, France

**Gérard Guy**, Head of Experimental Unit, National Institute for Agronomical Research, Benquet, France

**Solange Guillaumin**, National Institute for Agronomical Research, Nouzilly, France

**Stéphane Davail**, University Institute of Technology, Mont-de-Marsan, France

**Jean-Marc André**, University Institute of Technology, Mont-de-Marsan, France

**Robert Hoo-Paris**, University Institute of Technology, Mont-de-Marsan, France

- “In response to overfeeding, de novo hepatic lipogenesis from dietary carbohydrates is dramatically enhanced in the goose (Mourot et al., 2000). Despite that the concentration of Very low density lipoproteins (VLDL) and High density lipoproteins (HDL) is also increased (Fournier et al., 1997), the lipoprotein secretion pathway appears to be overwhelmed, and a large proportion of triglycerides remains stored in the liver, which results in situ steatosis (Hermier et al., 1991a). Such an imbalance between triglyceride synthesis and secretion is a feature of both NASH [Non-alcoholic steatohepatitis] and alcoholic intoxication, whereas an increased HDL concentration resembles the modifications induced by moderate alcohol consumption in human (Sabesin, 1981; Baraona and Lieber, 1998; Mensenkamp et al., 2001).”<sup>29</sup>

**Tatty M. Hodge**, Veterinarian, East Greenbush, New York, USA

- “Animals in this condition would experience constant pain...I consider the production of foie gras to be inhumane as it deliberately harms the duck...”<sup>30</sup>

**Wendy Jensen**, Veterinarian, Concord, New Hampshire, USA

- “Having seen firsthand the terrible suffering of ducks...confirmed by autopsy reports...I am forced to conclude that foie gras is produced at a terrible cost to the birds themselves. Foie gras, touted as a gourmet delicacy to entice the palate, is really only the diseased tissue of a tortured sick animal.”<sup>31</sup>

**Mark Lerman**, Veterinarian, Monsey, New York, USA

- “[T]he oesophagus is so thickened and inflamed and infected from the force ‘feeding’ that he could never eat on his own....The lesions seen in this duck and others like him, are unique. They are the result of a continuous, perverse and concerted effort to physically force these poor creatures to do something they weren’t designed to do.”<sup>32</sup>

**Christine Nicol**, Professor of Animal Welfare, School of Veterinary Science, University of Bristol, UK

- “My view on the production of foie gras is clear and supported by biological evidence. This practice causes unacceptable suffering to these animals. The primary issue is the use of force...Foie gras production takes no account of the physiological state of the bird, but involves force feeding far beyond the point at which the bird would naturally stop. This practice is repeated daily for a number of weeks, causing lesions to the throat, pathological changes to the liver and painful distension of the abdomen, limiting movement.”<sup>33</sup>
- “Foie gras production significantly reduces welfare...It causes pain during and as a consequence of the force feeding, feelings of malaise as the body struggles to cope with extreme nutrient imbalance, and

distress due to the forceful handling. The most extreme distress is caused by loss of control of the birds' most basic homeostatic regulation mechanism as their hunger control system is over-ridden.”<sup>33</sup>

**Laurie Siperstein-Cook, Mobile Avian Veterinarian, Davis, California, USA**

- “[T]he esophagus of force-fed ducks exhibit[s] scarring from the repeated trauma from the wide metal tubes that are pushed down the esophagus during the force-feeding process. Rough handling by the workers doing the force-feeding would exacerbate this trauma to the mucosal surface of the esophagus.  
Excess weight at fast growth rates causes pressure on the legs and joints, also making it difficult and painful to walk. Ducks in foie gras factories have been shown to suffer from a much higher rate of long bone fractures at the time of slaughter than ducks raised for meat and not force-fed.”<sup>34</sup>

**Ward B. Stone, Wildlife Pathologist, New York State Department of Environmental Conservation, Wildlife Pathology Unit, Delmar, New York, USA**

- “The overloading of the liver with lipid (lipidosis) is a pathological process and I have never seen extensive lipidosis in waterfowl except for the cases involving overfeeding for liver pate.”<sup>35</sup>
- “[T]he short tortured lives of ducks raised for Foie Gras is well outside the norm of farm practice. Having seen the pathology that occurs from Foie Gras production, I strongly recommend that this practice be outlawed.”<sup>35</sup>

**Christine Van Berchem, Veterinarian, Brussels, Belgium**

**René Zayan, Professor of Ethology, Université Catholique de Louvain, Louvain-la-Neuve, Belgium**

- “[T]here is absolutely no doubt, that force-feeding subjects them to physiological and behavioural suffering which dramatically reduces their well-being...[F]orce-feeding constitutes a reprehensible practice from an ethical point of view.”<sup>36</sup>

**René Zayan, Professor of Ethology, Université Catholique de Louvain, Louvain-la-Neuve, Belgium**

- “In short, autoforce-feeding does not exist in ducks in their natural state and, if hyperplagia is observed in a duck in daily life, it is always pathological behaviour, symptomatic of physical and social stress. In no case no-one can affirm that force-feeding satisfied in a maximum way a visceral or basic physiological need, in as much as the need for food in an animal is accompanied by a choice, spontaneous or learned, and an active search of adequate food for the maintenance of health.”<sup>37</sup>

**Pew Commission on Industrial Farm Animal Production**

- “[T]he Commission recommends the end to force-feeding of fowl to produce foie gras...”<sup>38</sup>

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